**The Role of Assessment in Elementary Math**

**The Purpose of Assessment**

Traditionally, we have used assessments to measure how much our students have learned up to a particular point in time (Stiggins, 2007). This is what Rick Stiggins calls "assessment of learning" and what we use to see whether our students are meeting standards set by the state, the district, or the classroom teacher. These *summative assessments* are conducted after instruction to determine how much learning has taken place. Although these assessments *of* learning are important if we are to ascribe grades to students and provide accountability, student achievement increases when teachers choose to focus more on assessment *for* learning. These types of assessment — *formative assessments* — support learning during the learning process.

Since formative assessments are considered part of the learning, they need not be graded as summative assessments are. Rather, they serve as practice for students, just like a meaningful homework assignment (Chappuis & Chappuis, 2007/2008). Formative assessments check for understanding along the way and guide teacher decision-making about future instruction; they also provide feedback to students so they can improve their performance. Stiggins suggests, "the student's role is to strive to understand what success looks like and to use each assessment to try to understand how to do better the next time." Formative assessments help us differentiate instruction and thus improve student achievement.

**Differentiating Instruction in Response to Formative Assessments**

Thomas R. Guskey (2003) recommends that for assessments to become an integral part of the instructional process, teachers need to change their approach in three important ways. They must

* use assessments as sources of information for students, teachers and parents,
* follow assessments with high-quality corrective instruction, and
* give students second chances to demonstrate success.

Once you have assessed your learners, you must take action. You will be able to help your students achieve success by differentiating your instruction based on the information you have gathered. Ask yourself, "Who needs my attention now? Which students need a different approach? Which students are not learning anything new, because I haven't challenged them?"

After using any of the formative assessments in enVision’s SuccessNet, teachers can choose from among the differentiation strategies and lessons in enVision to scaffold for struggling learners or challenge advanced learners. Differentiation for struggling learners will help students during their "second-chance" learning on the road toward mastery. The enVision pieces for advanced learners will challenge those students who, in my opinion, are often forgotten in mixed-ability classrooms. With these adjustments to lesson plans, we are able to respond to academic diversity in our heterogeneous classrooms.

**Gathering Multiple Sources of Evidence**

In differentiated classrooms everywhere, a resounding mantra is "Fair is not equal; fair is getting what you need." Assessments enable us to determine what students need. But for our assessments to be accurate, we need multiple measures of student understanding. We need evidence gathered over time in different ways to evaluate how effective the teaching and learning process has been. Tomlinson and McTighe (2006) suggest that when we gather a "photo album" rather than a "snapshot" of our students, we can differentiate instruction based on a more accurate evaluation of our students' learning needs.

Canyons School District strives to support an "assessment tool kit" to implement to create a classroom that is continually more responsive to the needs of our diverse learners. These assessments alone have their individual strengths and weaknesses, but as a composite, they can provide teachers and students "evidence" of their learning and help them on their journey to greater achievement in school.

**The Purpose of Canyons School District Assessments in Mathematics**

**M-CBM’s:** Math Curriculum-Based Measures, or M-CBM’s, are benchmark assessments or screeners. The purpose of benchmarking three times a year with ALL students, even those students who have met or exceeded the benchmark, is that there is no guarantee students will continue to develop the skills being taught. Benchmarking ALL students three times a year provides educators with an efficient and accurate indicator of current skill performance. It also allows educators to monitor which students are on track for making AYP without having to wait until the end of the year testing.

**M-COMP:** Mathematics Computation, or M- COMP, assesses general math computation performance and rate of progress. Specifically, depending on the grade level, this assessment focuses on size of numbers, column addition, basic facts, complex computation, decimals, fractions, conversions and percentages. First through eighth grades are assessed with M-COMP.

**M-CAP:** Mathematics Concepts and Applications, or M-CAP, assesses general math problem-solving skills and rate of progress. Specifically, depending on the grade level, this assessment focuses on data and probability, number sense, operations, patterns and relationships, geometry, measurement and algebra. Fourth through eighth grades are assessed using M-CAP.

**CFA’s:** Common Formative Assessments, or CFA’s, are “an assessment typically created collaboratively by a team of teachers responsible for the same grade level or course.  Common formative assessments are frequently administered throughout the year to identify (1) individual students who need additional time and support for learning, (2) the teaching strategies most effective in helping students acquire the intended knowledge and skills, (3) program concerns – areas in which students generally are having difficulty achieving the intended standard – and (4) improvement goals for individual teachers and the team” (DuFour, et al, 2005). Furthermore, **experienced practitioners and Canyons School District recommend that (1) formative assessments not be used for generating student grades, and (2) results of a formative assessment should not be used as a formal teacher evaluation instrument.**

**District CFA’s:** Canyons School District common formative assessments, or CFA’s, are similar to monthly or quarterly benchmarks used in other districts to inform instruction. In addition to the district CFA’s, topic tests provide regular and timely feedback regarding student attainment of critical standards. These assessments are brief appraisals of how students are responding to instruction in relation to mastering math concepts and standards on a routine basis. These tests are meant to be formative, meaning that they should provide teachers with information to determine instructional “next steps”. Of course, if a teacher chooses to not take any instructional action based on student performance on a given CFA, that test then becomes summative.

CSD CFA’s and topic tests may be used as matching *pre-* and *post-*assessments to ensure same-assessment to same-assessment comparison of student growth. Pre-assessment is the spark that initiates differentiated instruction in the classroom. CFA and topic test post-assessment results ought be analyzed in grade level teams to guide instructional planning and delivery.

**Grade level CFA’s:** Common Formative Assessments created by grade level teams provide regular and timely feedback regarding student attainment of math *concepts*, which allows teachers to modify instruction to better meet the diverse learning needs of all students. These multiple-measure assessmentsallow students to demonstrate their understanding in a variety of formats and provide ongoing collaborationopportunities for grade-level, course, and department teachers.

Grade level CFA’s ensure consistent expectationswithin a grade level, course, and department regarding standards, instruction, and assessment priorities, using agreed-upon criteria for proficiencyto be met within each individual classroom, grade level, school, and district. They also offer results that have predictive valueas to how students are likely to do on each succeeding assessment, in time to make instructional modifications (Ainsworth & Viegut, 2006).

**And more about CFA’s…**

What are other advantages of common formative assessments?  DuFour, et al (2005) lists these reasons and comments:

1. **Common assessments are more efficient than assessments created by individual teachers.** It is ineffective and inefficient for teacher to operate as independent subcontractors who are stationed in proximity to others, yet work in isolation.
2. **Common assessments are more equitable for students.**
3. **Common assessments represent the most effective strategy for determining whether the guaranteed curriculum is being taught and, more importantly, learned.** Doug Reeves (2004) refers to common assessments as the “gold standard” because they promote consistency in expectations and provide timely, accurate, and specific feedback to both students and teachers.
4. **Common assessments inform the practice of individual teachers.**  With this information, a teacher can seek assistance from teammates on areas of concern and can share strategies and ideas on skills in which his or her students excelled.
5. **Common assessments build a team’s capacity to improve its program.**  Collective analysis can lead to new curriculum, pacing, materials, and instructional strategies designed to strengthen the academic program offered.
6. **Common assessments facilitate a systematic, collective response to students who are experiencing difficulty.**  Because the students are identified at the same time and because they need help with the same specific skills that have been addressed on the common assessment, the team and school are in a position to create a timely, systematic program of intervention across classrooms.

**Resources**

Ainsworth, L. & Viegut, D. (2006). *Common formative assessments: How to connect standards-based instruction and assessment*. Thousand Oaks, CA: Corwin Press.

Chappuis, S. & Chappuis, J. (2007/2008). The best value in formative assessment. Eductaional Leadership, 65(4) 14-19.

DuFour, R., Eaker, R. & DuFour, R. (2005). *On common ground: The power of professional learning communities.* Bloomington, IN: Solution Tree.

Guskey, T. R. (2003). How classroom assessments improve learning. Educational Leadership, 60(5) 6–1.

Reeves, D. (2004). Accountability for learning: How teachers and school leaders can take charge. Alexandria, VA: Association for Supervision and Curriculum Development (ASCD).

# Stiggins, R. (2007). *Introduction to student-involved assessment for learning.* Upper Saddle River, NJ: Pearson Publishing.

Tomlinson, C. A. & McTighe, J. (2006). *Integrating differentiated instruction and understanding by design: Connecting content and kids.* Alexandria, VA: Association for Supervision and Curriculum Development (ASCD).